



COPY OF PAPERS  
ORIGINALLY FILED

#4

Attorney's Docket No.: **H00498/70168 TJO**  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Olivier J.A. Schueller et al.  
Serial No.: 10/003,033  
Conf. No. 2182  
Filed: November 1, 2001  
For: OPTICAL MODULATOR/DETECTOR BASED ON RECONFIGURABLE  
DIFFRACTION GRATING  
Art Unit: 2878

**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Commissioner for Patents, Washington, D.C. 20231, on the 12 day of June 2002.

*Karen M. Angelo*  
Signature

**Box Missing Parts**  
Commissioner for Patents  
Washington, D.C. 20231-0001

**SECOND PRELIMINARY AMENDMENT**

Sir:

Prior to calculating the filing fee in the above-identified application, please amend the application as follows:

**IN THE CLAIMS**

Please cancel claims 97 and 98 without prejudice.

Please rewrite claims 4-7, 9, 15, 18, 22, 24, and 28 as follows.

4. (Amended) A method as in claim 1, wherein at least one of the first and second samples is two-dimensionally variant.
5. (Amended) A method as in claim 1, wherein the separate portions of the first sample are isolated from each other, and the separate portions of the second sample are isolated from each other.
6. (Amended) A method as in claim 1, wherein the separate portions of the first sample are exposed to electromagnetic radiation without exposing any portion of the first sample between

Serial No. 10/003,033  
Conf. No. 2182

- 2 -

Art Unit 2878

the separate portions to the electromagnetic radiation, and separate portions of the second sample are exposed to electromagnetic radiation without exposing portions of the second sample between the separate portions to the electromagnetic radiation.

7. (Amended) A method as in claim 1, involving determining absorption of the electromagnetic radiation by each of the first and second samples and determining a difference in absorption of the second sample compared with the first sample.

9. (Amended) A method as in claim 1, wherein the first and second samples are different fluids.

15. (Amended) A method as in claim 1, wherein each of the first and second samples comprises a series of elongate, essentially parallel sections.

18. (Amended) A method as in claim 1, wherein each of the first and second samples is two-dimensionally variant, and the diffraction pattern is two-dimensionally variant.

22. (Amended) A method as in claim 1, wherein each of the first and second samples is positioned in elongate voids in an article that is at least partially transparent to the electromagnetic radiation.

24. (Amended) A method as in claim 1, wherein each of the first and second samples is positioned in isolated, essentially parallel channels in a sample chamber.

28. (Amended) A method as in claim 1, wherein each of the first and second samples is positioned in isolated, essentially parallel channels in a sample chamber that is essentially transparent to the electromagnetic radiation.

610293.1

**MARKED UP CLAIMS**

4. (Amended) A method as in [any preceding] claim 1, wherein at least one of the first and second samples is two-dimensionally variant.
5. (Amended) A method as in [any preceding] claim 1, wherein the separate portions of the first sample are isolated from each other, and the separate portions of the second sample are isolated from each other.
6. (Amended) A method as in [any preceding] claim 1, wherein the separate portions of the first sample are exposed to electromagnetic radiation without exposing any portion of the first sample between the separate portions to the electromagnetic radiation, and separate portions of the second sample are exposed to electromagnetic radiation without exposing portions of the second sample between the separate portions to the electromagnetic radiation.
7. (Amended) A method as in [any preceding] claim 1, involving determining absorption of the electromagnetic radiation by each of the first and second samples and determining a difference in absorption of the second sample compared with the first sample.
9. (Amended) A method as in [any preceding] claim 1, wherein the first and second samples are different fluids.
15. (Amended) A method as in [any preceding] claim 1, wherein each of the first and second samples comprises a series of elongate, essentially parallel sections.
18. (Amended) A method as in [any preceding] claim 1, wherein each of the first and second samples is two-dimensionally variant, and the diffraction pattern is two-dimensionally variant.

Serial No. 10/003,033  
Conf. No. 2182

- 5 -

Art Unit 2878

22. (Amended) A method as in [any preceding] claim 1, wherein each of the first and second samples is positioned in elongate voids in an article that is at least partially transparent to the electromagnetic radiation.

24. (Amended) A method as in [any preceding] claim 1, wherein each of the first and second samples is positioned in isolated, essentially parallel channels in a sample chamber.

28. (Amended) A method as in [any preceding] claim 1, wherein each of the first and second samples is positioned in isolated, essentially parallel channels in a sample chamber that is essentially transparent to the electromagnetic radiation.

2003033-062002

~~\_\_\_\_\_~~

[illegible]